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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,774	02/09/2004	Xiangtao Gao	1094-48	8839
28249 7590 10/05/2007 DILWORTH & BARRESE, LLP 333 EARLE OVINGTON BLVD. SUITE 702 UNIONDALE, NY 11553			EXAMINER DANG, THUAN D	
			ART UNIT 1764	PAPER NUMBER
			MAIL DATE 10/05/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/774,774

Applicant(s)

GAO ET AL.

Examiner

Thuan D. Dang

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 2-4, 7 and 8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 6 and 9-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 8/5/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of group II invention (alkylation process of aromatic with olefin found in claims 1, 5, 6, and 9-22) in the reply filed on 9/7/2007 is acknowledged. The traversal is on the ground(s) that all of claims belong to the same class (585) and these subclasses 467, 475, and 722 are so interrelated it would not be an undue burden to search all of the alkylation reactions covered by applicant's claims. This is not found persuasive because these alkylation reactions are clearly differently classified by the patent office due to these reactions which have different reactants and produce different products. The search of each reactions must differently performed and claimed processes must be differently rejected. Therefore, it is incorrect to say that there is no undue burden to search all of these reactions together.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 5, 6, 11, 12, 13, 14, 15, are rejected under 35 U.S.C. 103(a) as being unpatentable over LaPierre et al (4,899,008).

LaPierre discloses a process of alkylation of a benzene with an effective alkylating olefins which is produced by the paraffinic reactants in the presence of a faujasite zeolites such as Y-zeolite having crystalline size of about 0.02 to 1 microns (the abstract; col. 3, lines 18-22, and 59-66; col. 4, lines 26 and 27; col. 5, line15-20).

On column 5, line 62-67, LaPierre discloses that the catalyst contains metals such as group I-VIII and rare earth metals such as nickel.

The condition of the reaction can be found column 2, line 63 through column 3, line 6.

LaPierre discloses that the catalyst has the presence of alumina as a binder (column 4, line 18).

LaPierre does not disclose that (1) the crystal size of, specifically, no more 100 nm, 50 nm, and 25 nm as called for in claims 1, 11 and 12, (2) that the catalyst contains sodium, (3) the ratio of the mesopore and micropore ratio as called for in claim 20 and 21, and (4) the temperature as called for in claim 22.

However, LaPierre discloses that the crystal size down to 0,02 microns. Therefore, the claimed range is overlapped with the one disclosed by LaPierre. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the LaPierre process by using a catalyst having crystal size of less than 100 nm to arrive at the applicants' claimed process since it is expected that using a catalyst having a crystal size larger than the one used in the claimed process, such as 150 nm, 200 nm would yield similar results when other variables are kept the same.

However, LaPierre discloses that the catalyst contains group I metal and rare earth metal. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the LaPierre process by using sodium as the group I metal and lanthanum as the rare earth metal to arrive at the applicants' claimed process since it is expected that using any metal of group I metal and rare earth metals would yield similar results. Of course, an appropriate amount of these two metals must be selected to optimize the performance of the catalyst.

However, the ratio of mesopore and micropore depends on how much crystals having different sizes are selected. It would have been obvious to one having ordinary skill in the art at

the time the invention was made to have modified the LaPierre process by selecting crystals in the range of size disclosed by LaPierre to arrive at the claimed process since it is expected that any ratio of the crystals having different sizes disclosed by LaPierre would yield similar results.

However, it is well-known that temperature of a process is a variable which must be selected to optimize a chemical process. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the LaPierre process by operating the LaPierre process by selecting an appropriate temperature with an expectation of similar results.

Allowable Subject Matter

Claims 9 and 10 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim (electroalkylation of aromatic with olefin) and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuan D. Dang whose telephone number is 571-272-1445. The examiner can normally be reached on Mon-Thu.

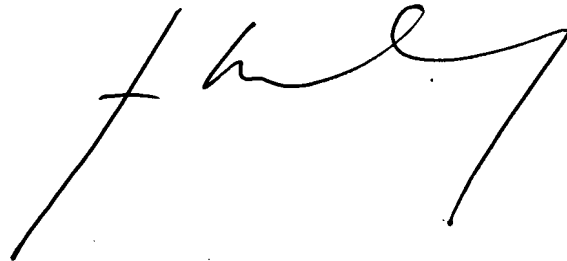
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Thuan D. Dang
Primary Examiner
Art Unit 1764

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A handwritten signature in black ink, appearing to read 'Thuan D. Dang', is written over the printed name and title.